REMARKS

Claims 1, 6-9 and 15-20 have been amended. No claims have been added or cancelled. Therefore claims 1-20 remain pending in the application. Reconsideration is respectfully requested in light of the following remarks.

The Examiner objects to the drawings under 37 CFR 1.83(a) and asserts that the subject matter of claims 3, 5, 11, 13, 17, and 19 does not appear to be shown in the drawings. Applicants assert, however, that the *features* of these claims are illustrated in the drawings when view in conjunction with the description in the specification.

Claims 3, 11, and 17 recite *wherein the refresh mechanism is further configured to stop the production database prior to said switch and start the production database after said switch*, and similar limitations. Applicants assert that FIGs. 1, 3, and 4 clearly illustrate the refresh mechanism feature of the disclosed invention, including one or more host systems 100, a refresh mechanism 200, a production database 202, and a database clone 204. In addition, FIG. 2 illustrates a method for refreshing the production database according to one embodiment. This method includes, at block 306, the basic operation, "switch the storage checkpoint to be the entry point to the production database," as recited in independent claims 1, 8, and 15. The description of this step, in paragraph [0034], describes various details of alternate embodiments of the operation illustrated by block 306, including this one, "One embodiment may include stopping the production database 202 prior to switching, and starting the production database 202 after switching." Thus the features that perform the functionality recited in claims 3, 11 and 17 are clearly illustrated in the drawings.

Claims 5, 13, and 19 recite *wherein the generated database clone includes references to data in the production database*, and similar limitations. Again, Applicants assert that FIGs. 1, 3, and 4 clearly illustrate the elements of the disclosed invention, including one or more host systems 100, a refresh mechanism 200, a production database 202, and a database clone 204. As discussed above, FIG. 2 illustrates a method for

refreshing the production database according to one embodiment. This method includes, at block 302, the basic operation, "generate a database clone from the storage checkpoint," as recited in independent claims 1, 8, and 15. The description of this feature, in paragraph [0035], describes various details of alternate embodiments of the operation illustrated by block 302, including this one, "In one embodiment, the generated database clone includes references to data in the production database and not the data itself, and is thus storage space-efficient." Applicants assert, therefore, that the drawings clearly illustrate the features of claims 5, 13, and 19, and that the drawings, when taken together with their descriptions, clearly illustrate the subject matter of these claims.

Section 101 Rejection:

The Examiner rejected claims 1-20 under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. Applicants traverse this rejection for at least the following reasons.

The Examiner asserts that in claims 1 and 8, the claimed system appears to be implemented in software, which the Examiner asserts is functional descriptive material per se and therefore non-statutory. In order to expedite prosecution, claim 1 has been amended to more clearly recite the structural elements of Applicants' invention, specifically one or more hosts configured to implement a production database and a refresh mechanism, along with other limitations. Regarding claim 8, Applicants disagree with the Examiner's characterization. Claim 8 clearly recites a system having structure, that is, one including means to perform the various functions recited therein, including generating a checkpoint and generating a database clone. Both of these generated items are useful results of Applicants' disclosed invention, as they are necessary for implementing the refresh mechanism as disclosed.

Applicants also remind the Examiner that MPEP 2106.IV.B.2.(b) states that a process is statutory if it is "limited to a practical application in the technological arts". The most famous example of this category is found in *State Street Bank & Trust Co. v.*

Signature Financial Group, Inc., 149 F.3d 1368, 47 USPQ2d 1596 (Fed. Cir. 1998) as discussed in MPEP 2106 where the court stated that the relevant claim was statutory because "the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application ... because it produces 'a useful, concrete and tangible result' – a final share price". Just like transforming data representing discrete dollar amounts to determine a final share price was considered a practical application and thus statutory in *State Street*, the generation of a checkpoint and the generation of a database clone are clearly practical applications and thus statutory. MPEP 2106.II.A states: "Office personnel have the burden to establish a *prima facie* case that the claimed invention as a whole is directed to solely an abstract idea or to manipulation of abstract ideas or does not produce a useful result. Only when the claim is devoid of any limitation to a practical application in the technological arts should it be rejected under 35 U.S.C. 101." (emphasis added). As discussed above, claim 8 clearly recites a practical application in the technological arts, whether the means include a hardware or software implementation or some combination thereof. Therefore, the rejection of claim 8 is improper. Similar remarks apply also to claims 9 and 15, which recite a method and a tangible, computer-accessible medium comprising program instructions, respectively, each of which generates the checkpoint and database clone recited in claim 8.

For at least the reasons above, Applicants assert that claims 1-20 are clearly directed to statutory subject matter and respectfully request removal of the § 101 rejections.

Section 112, Second Paragraph, Rejection:

The Examiner rejected claims 1-20 under 35 U.S.C. § 112, second paragraph, as being indefinite.

Regarding claim 1, the Examiner states that it is unclear to which production database "the production database" in line 10 refers. The Examiner also states that there

is insufficient antecedent basis for "the entry point" in line 10. Claim 1 has been amended to clarify these references. Claims 8, 9, and 15 have also been amended to clarify the reference to the entry point and claims 15-20 have been amended to recite a tangible, computer-accessible medium.

Thus, Applicants respectfully request removal of the § 112, second paragraph rejections.

Section 103(a) Rejection:

The Examiner rejected claims 1-3, 5-11, 13-17 and 19-20 under 35 U.S.C. § 103(a) as being unpatentable over Moore, et al. (U.S. Publication 2003/0092438) (hereinafter "Moore") in Lomet (U.S. Patent 6,578,041) and claims 4, 12 and 18 as being unpatentable over Moore in view of Lomet and further in view of Applicant Admitted Prior Art (AAPA). Applicants traverse this rejection for at least the following reasons.

Regarding claim 1, contrary to the Examiner's assertion, Moore in view of Lomet fails to teach or suggest *one or more host systems, configured to implement a production database and a refresh mechanism configured to generate a storage checkpoint of the production database, generate a database clone from the storage checkpoint, load data to the database clone, wherein the production database is available for access by users during said load, and switch the storage checkpoint to be an entry point to the production database.* First, the Examiner asserts that Moore teaches a production database, or "primary database" in element 52 of FIG. 2. However, element 52 is not described as a production database, or even a "primary database," but as a primary controller, which may include a processor 58, an application software or hardware 62, a local database 66, of both stable and transient data, a control block 70, electronically connected to processor 58, a control block version table 74, and a replica state database 78 (paragraph [0018]). Thus, element 52 is clearly not a production database, or a database at all, but a controller of a wireless communication stabilization system (abstract, paragraph [0018])

Applicants note that the Examiner fails to mention the element "a refresh mechanism" in his remarks or to cite anything in Moore or Lomet to teach such an element. Applicants remind the Examiner that in order to reject a claim as obvious, the Examiner has the burden of establishing a *prima facie* case of obviousness. *In re Warner* et al., 379 F.2d 1011, 154 U.S.P.Q. 173, 177-178 (C.C.P.A. 1967). To establish a *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974), MPEP § 2143.03. As the Examiner has not shown that Moore in view of Lomet teaches one or more hosts comprising a refresh mechanism, the rejection of claim 1 is improper.

Further regarding claim 1, the Examiner asserts that Moore teaches *generating a checkpoint of a production database* in FIG. 2, element 82, and paragraph [0019]. This citation includes the following:

> When the primary processor 58 reaches a steady state (i.e., stable wireless communications) the stable data is written to the replica state database 78 within the control block 70. The checkpoint service 82 is notified that the state data is available for transfer to the secondary controller 54. The checkpoint service 82 replicates the state data and stores it in the replica state database 80."

This citation, therefore, does not teach generating a checkpoint of primary controller 52, which the Examiner interprets as Applicants' production database, but instead describes a checkpoint service that replicates the state data stored in replica state database 78 (by processor 58) and stores it in replica state database 80 (of secondary controller 54). Replica state database 78 is not a production database, nor is it described as such by the Examiner or in Moore.

The Examiner further asserts that Moore teaches generating a database clone from the storage checkpoint and loading the database clone in paragraph [0019], as "replicating the state data" and "transferring data to the secondary controller." However, the Examiner appears to be interpreting the replication of the state data in database 78 to be both "generating a checkpoint" and "generating a database clone" of Applicants' claim 1, and then to be interpreting storing the replicated data in database 80 of the primary controller to be "loading data to the database clone". Replicating the state data of

database 78 clearly cannot be both "generating a storage checkpoint" and "generating a database clone from the storage checkpoint," as recited in Applicants' claim 1. Similarly, storing the replicated state database in database 80 cannot be both "generating a database clone" and "loading data to the database clone." Therefore, Moore clearly does not teach these distinct operations in which a first item is generated (the storage checkpoint), this item is used to generate another item (the database clone), and then data (e.g., new or different data) is loaded to the database clone.

Further regarding claim 1, the Examiner asserts that Moore teaches switching the storage checkpoint to be the entry point to the production database in paragraph [0020], as "secondary assuming control of the database therefore being an entry point for subsequent processing of the database." The Examiner's interpretation of this citation is incorrect. Paragraph [0020] states, "In the event of a fault or failure in the primary controller 52... Upon shutdown of the primary controller 52, the secondary controller 54 assumes processing control of the system 50. The secondary controller 54 reads the replica state database 80, rebuilds its local database 68, and is therefore able to take control with little or no interruption of wireless service." Thus, this citation describes recovery from a fault or failure condition in which a secondary controller assumes processing control of wireless communication stabilization system 50. It has nothing to do with a refresh mechanism switching a storage checkpoint to be the entry point to the production database, as recited in Applicants' claim 1. Furthermore, there is nothing in this citation that teaches or suggests an entry point into a production database at all, much less one that corresponds to a storage checkpoint generated by a refresh mechanism.

The Examiner admits that Moore does not expressly teach wherein the production database is available for access by users during the loading and relies on Lomet to teach this limitation. The Examiner asserts that Lomet teaches a database is available for access during loading to a clone in FIG. 2, column 3, lines 25-30, and column 6, lines 32-42 and 45-55. However, these citations do not describe operations of a refresh mechanism for a production database using a database clone, as recited in Applicants' claims, but instead describe a back-up mechanism in which a stable database is divided

into disjoint partitions, each of which may be backed-up independently while update activity continues. Contrary to the Examiner's assertion, there is nothing in this citation that teaches the use of a database clone, as would be understood by one of ordinary skill in the art. Therefore, the combination of Moore and Lomet does not teach or suggest all the limitations of Applicants' claim 1.

The Examiner asserts that it would not have been obvious to modify Moore to include the above teachings of Lomet to achieve high availability, as taught by Lomet (column 3, lines 35-40). However, Applicants assert that as the system of Moore is directed toward stabilization of wireless communication during software application changes, it would not be obvious to apply teachings directed toward improvement in availability of data through on-line back-ups, as taught by Lomet, to Moore's system.

For at least the following reasons, the rejection of claim 1 is not supported by the cited art and removal thereof is respectfully requested. Independent claims 8, 9, and 15 include limitations similar to claim 1, and so the arguments presented above apply with equal force to these claims, as well.

Applicants also assert that numerous ones of the dependent claims recite further distinctions over the cited art. However, since the rejection has been shown to be unsupported for the independent claims, a further discussion of the dependent claims is not necessary at this time.

CONCLUSION

Applicants submit the application is in condition for allowance, and prompt notice to that effect is respectfully requested.

If any extension of time (under 37 C.F.R. § 1.136) is necessary to prevent the above-referenced application from becoming abandoned, Applicants hereby petition for such an extension. If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5681-12400/RCK.

Also enclosed herewith are the following items:

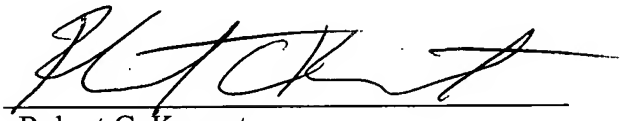
☒ Return Receipt Postcard

☐ Petition for Extension of Time

☐ Notice of Change of Address

☐ Other:

Respectfully submitted,



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Date: April 11, 2006